(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 December 2002 (19.12.2002)

PCT

(10) International Publication Number
WO 02/101317 A3

(51) International Patent Classification[7]: F41G 9/00

(21) International Application Number: PCT/US02/06102

(22) International Filing Date: 27 February 2002 (27.02.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/795,577 28 February 2001 (28.02.2001) US

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(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

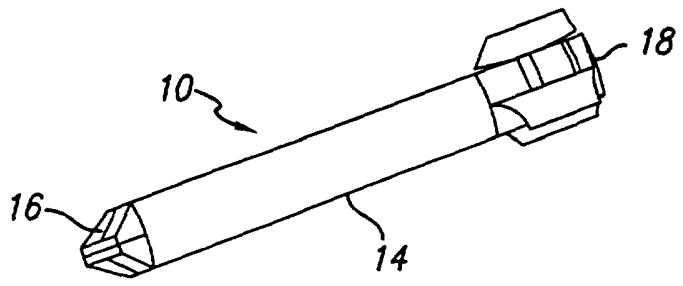
(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
3 April 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PRECISION-GUIDED HYPERSONIC PROJECTILE WEAPON SYSTEM



(57) Abstract: A precision-guided hypersonic projectile weapon system. The inventive system includes a first subsystem for determining a target location and providing data with respect thereto. A second subsystem calculates trajectory to the target based on the data. The projectile is then launched and guided in flight along the trajectory to the target. In the Illustrative application, the projectile is a tungsten rod and the first subsystem includes a forward-looking infrared imaging system and a laser range finder. The second subsystem includes a fire control system. The fire control system includes an optional inertial measurement unit and predicts target location. The projectile is mounted in a missile launched from a platform such as a vehicle. After an initial burn, the missile launches the projectile while in flight to the target. The missile is implemented with a rocket with a guidance system and a propulsion system. In accordance with the present teachings, the guidance system includes a transceiver system mounted on the projectile. The transceiver system includes a low-power continuous wave, millimeter wavelength wave emitter. A system is included at the launch platform for communicating with the projectile. The platform system sends a blinking command to the projectile and measures the round trip delay thereof to ascertain the range of the projectile. Velocity is determined by conventional Doppler techniques or differentiation. Azimuth and elevation are then determined by a monopulse antenna on the launch platform. As a consequence, the platform ascertains the location of the projectile and the impact point thereof. The platform generates a command to the projectile which is received by the projectile and used to actuate control surfaces to adjust the trajectory and impact point thereof as necessary.

WO 02/101317 A3

INTERNATIONAL SEARCH REPORT

I ional Application No
PCT/US 02/06102

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 F41G9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 F41G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 554 994 A (SCHNEIDER ARTHUR J) 10 September 1996 (1996-09-10) column 4, line 27 -column 5, line 53; figures 1,4	1,3, 8-10, 15-17
A	the whole document	2,4-7, 11-14

X	US 6 016 990 A (SMALL JAMES G) 25 January 2000 (2000-01-25) column 2, line 66 -column 3, line 17; figure 9	1,8-10, 15,16
A	the whole document column 7, line 13 -column 7, line 39	2-7, 11-14

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
10 January 2003	20/01/2003

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INTERNATIONAL SEARCH REPORT

Ii onal Application No
PCT/US 02/06102

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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